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Dipole moment and the configuration of cyclic compounds - Communication 1. 1,3-Dioxolanes

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Abstract

1. A comparison of the dipole moments found by calculations for various possible configurations of 1,3-dioxolane and methyl-halogen substituted 1,3-dioxolanes with the experimental value shows that the most probable configurations are those with Cs symmetry with an angle between the two faces of 145‡, or else LeFèvre's configuration. 2. The most probable configuration for 2-alkoxysubstituted 1,3-dioxolanes is the semi-armchair type configuration (C2) as is also the case for 1,3-dioxolanes with nonpolar substituents. 3. In the substituted 1,3-dioxolanes that we have considered, the polar groups are in the quasi-equatorial position and have free rotation. © 1963 Consultants Bureau.

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